

CHAPTER 11

WASTE MANAGEMENT

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BMP 11-1 UNDERGROUND STORAGE TANKS

DEFINITION

An underground storage tank is defined as any tank with at least 10 percent of its volume buried below ground. Underground tanks are potential sources of ground water contamination because they are commonly used for the storage of sewage, motor fuels, or other potentially hazardous materials. (Note: The UST program does not cover residential septic tanks.)

PURPOSE

To prevent the discharge of degraded water to ground or surface water supplies.

APPLICABILITY

Applicable to any business or agency, such as, gas stations, marinas, utility maintenance yards and farms which store liquids in underground tanks.

PLANNING CRITERIA

The design and installation of new storage tanks and the repair and maintenance of existing tanks must be in compliance with local, state and federal regulations. There has been an increase in the number of leaking underground tanks. These leaking tanks can degrade water quality.

Underground tanks which are no longer in use must be removed and disposed of properly or else left in place and filled with an acceptable inert material depending on the applicable state or local laws. Prior to any installation, repair, removal, or closure of underground tanks, secure the necessary permits from the proper authorities. **Consult with the respective County Health Department and the Nevada Division of Environmental Protection, Bureau of Corrective Actions (UST/LUST/Petroleum Claims branch).** These agencies have compiled an extensive manual geared specifically for owners/operators of tanks.

METHODS AND MATERIALS

The installation, repair, removal or closure of underground tanks must be conducted by qualified professionals. For tanks that are leaking or are suspected of leaking, samples of the soil, ground water, or surface water must be gathered to determine the release of a hazardous substance (including petroleum products) and would have to be accomplished by or overseen by someone with certification as a Environmental Manager under the NDEP Certification Program. Temporary BMPs must be installed and in place during all underground tank activities involving any soil disturbance. The ordinances and statutes of the state and county within which the tank is located shall be complied with.

MAINTENANCE

Underground storage tanks should be tested and monitored periodically in order to detect any leaks.

EFFECTIVENESS

If properly installed and monitored, underground tanks will not cause degradation of water quality.

BMP 11-2 WASTE MANAGEMENT SYSTEMS

DEFINITION

A planned waste management system designed for solid and/or liquid waste containment, management and disposal in a manner which does not degrade the environment. Waste management systems are utilized for livestock wastes, municipal waste treatment plant effluent and sludges, agricultural processing wastes and industrial processing wastes.

PURPOSE

Waste management systems are implemented to manage agricultural, municipal and industrial wastes in a manner which minimizes impacts to the air, soil, surface and ground water resources, and to protect the public health and safety. Systems are specifically designed to preclude discharges to the environment and to the fullest extent practicable, recycle wastes through soil and vegetation.

APPLICABILITY

Each waste management system must be designed, engineered, constructed and maintained by a qualified professional for the complete management of the specific type of waste, given the specific site conditions. Industry standards, federal, state and local regulations, and waste treatment technology establish the minimum acceptable standards for waste management systems.

PLANNING CRITERIA

Design criteria must be in accordance with applicable federal, state and local regulations, industry standards and completed by a qualified professional engineer. Typical components of waste treatment systems include, but are not limited to:

- Sediment/Debris Basins or Other Settling Facilities
- Dikes, Diversions or Terraces
- Disposal Lagoons, Aerated Lagoons, Oxidation Ditches
- Drainage Field Ditches, Drainage Land Grading
- Grassed Waterways or Ditches
- Waste Storage Facilities
- Irrigation Systems
- Effluent Land Application
- Subsurface Drains
- Pumping Plants
- Waterspreading Facilities

All system components should be consistent with accepted engineering practices and protect public health and safety. Surrounding land uses should be incorporated into the waste management system development review process and mitigation measures installed to minimize off site impacts.

METHODS AND MATERIALS

A waste management system must be designed, engineered, constructed and maintained as a system. Individual components should not be constructed without an overall waste management plan approved. Public health and safety, wildlife and livestock should all be protected from potential hazards through the installation of safety devices and management practices. A comprehensive operations and maintenance plan should be developed for the system to ensure proper day to day operations.

MAINTENANCE

The operation of a waste management system will require ongoing inspection and maintenance to keep the system functioning. A comprehensive maintenance plan should address all system inspection and maintenance needs, including contingency and emergency response issues.

EFFECTIVENESS

A properly designed, constructed and maintained waste management system will function effectively while minimizing impacts to the environment.

BMP 11-3 SOLID WASTE DISPOSAL MANAGEMENT

DEFINITION

A management system for the proper disposal of domestic, commercial, agricultural and industrial solid wastes. Includes all landfill sites which must meet current federal, state and local regulations.

PURPOSE

To provide for the proper disposal of solid waste materials in a manner which will control pollution of surface and ground waters in accordance with applicable federal, state and local regulations.

APPLICABILITY

Applies to all entities within the State of Nevada disposing of solid waste including: communities, farms, ranches, recreation sites, commercial and industrial enterprises, mining operations, mineral exploration projects and the public.

PLANNING CRITERIA

The State of Nevada, Division of Environmental Protection has adopted statutes and regulations affecting municipal solid waste landfills and industrial solid waste disposal sites and has implemented a permit program for such facilities. Any solid waste landfill, irrespective of size or quantity, that receives household waste is a Municipal Solid Waste Landfill (MSWLF). There are three classes of disposal sites:

CLASS I MSWLF-	Receives 20 tons or more per day on annual average.
CLASS II MSWLF-	Receives less than 20 tons per day on annual average and has not caused ground water contamination, is located in an area that receives 25 inches or less of precipitation annually, and serves a community that has no practicable alternative for managing its solid waste.
CLASS III -	Receives only industrial solid waste.

The state regulations require that owners and operators meet specific criteria and obtain a permit based upon their disposal site classification. An individual landfill (i.e. farm, ranch, industrial, mining operation, etc.), is no longer allowable without a permit. Entities without a permitted landfill should be transporting their solid waste to a permitted landfill.

BMP 11-4 WASTE TREATMENT LAGOON

DEFINITION

An impoundment made by constructing an excavated pit, dam, embankment, dike, levee, or combination of these for biological treatment of organic waste. This practice does not include holding ponds and tanks.

PURPOSE

Lagoons are constructed to biologically decompose organic waste by aerobic or anaerobic organisms or a combination of both. The production of methane gas can be a by product of anaerobic activity and could be used to offset local energy costs.

APPLICABILITY

This BMP is applicable to lagoons located to serve predominantly rural or agricultural areas where there is a need for a facility to process concentrated organic waste, reduce sources of pollution, minimize health hazards and improve the local environment. Typically, there are no economically feasible alternatives to treatment by any other means.

PLANNING CRITERIA

Each waste treatment lagoon must be designed, engineered, constructed and maintained by a qualified professional for the complete management of the specific type of waste, given the specific site conditions. Industry standards, federal, state and local regulations must be adhered to. The State of Nevada, Division of Environmental Protection (NDEP) has statutes and regulations governing the design, construction, operation and maintenance of waste treatment facilities, including lagoons, through a permitting process. For additional information please contact the NDEP, Bureau of Water Pollution Control.

METHODS AND MATERIALS

A qualified professional engineer should be retained to design, engineer, construct, operate and maintain a waste treatment lagoon.

MAINTENANCE

A comprehensive maintenance plan should be developed in conjunction with the design and construction of a waste treatment lagoon. Lagoons require regular inspection and maintenance to ensure safe operations and effectiveness.

EFFECTIVENESS

A properly designed, constructed and maintained waste treatment lagoon will function effectively while minimizing impacts to the environment.

BMP 11-5 WASTE STORAGE POND

DEFINITION

An impoundment made by constructing an excavated pit, dam or embankment for the temporary storage of livestock or other agricultural wastes, waste water, and/or polluted runoff. Depending on the design, waste storage ponds can be aerobic or anaerobic or a combination of both.

PURPOSE

Waste storage ponds are utilized to store liquids, solid wastes and polluted runoff from concentrated livestock or waste areas until they can be safely utilized, evaporated, or otherwise disposed of.

APPLICABILITY

This practice applies generally in predominantly rural or agricultural areas, where there is a need for facilities to temporarily store agricultural wastes or polluted runoff, reduce pollution, minimize health hazards and improve the environment in predominantly rural or agricultural areas. Waste storage ponds must be designed and constructed to all applicable federal, state and local regulations.

PLANNING CRITERIA

Waste storage ponds should be designed, engineered and constructed by a qualified professional engineer. All federal, state and local laws, rules and regulations governing waste management, pollution abatement, public health and safety and environmental protection shall be strictly adhered to. A lining may be required if the potential for ground water contamination exists. The owner and operator is responsible for securing all required permits or approvals and for performing in accordance with such laws and regulations.

METHODS AND MATERIALS

A qualified professional engineer should be retained to design, engineer, construct, operate and maintain a waste storage pond.

MAINTENANCE

A comprehensive maintenance plan should be developed in conjunction with the design and construction of a waste storage pond. Storage ponds require regular inspection and maintenance to ensure safe operations and effectiveness.

EFFECTIVENESS

A properly designed, constructed and maintained waste storage pond will function effectively while minimizing impacts to the environment.

BMP 11-6

WASTE STORAGE STRUCTURE

DEFINITION

A fabricated structure for the temporary storage of animal or other agricultural wastes. Agricultural waste storage facilities typically include holding tanks and manure stacking facilities.

PURPOSE

These structures are a storage component of an agricultural waste storage system. They are constructed to temporarily store liquids, slurry or solid livestock manure, and other agricultural wastes until they can be treated, utilized, recycled or otherwise disposed of in an environmentally safe manner.

APPLICABILITY

Waste storage facilities are utilized where there is a need for fabricated structures to temporarily store agricultural wastes, reduce pollution of surface and ground waters, minimize public health and safety hazards and improve the environment. All federal, state and local laws, rules and regulations governing waste management, pollution abatement, public health and safety and environmental protection shall be strictly adhered to. The owner and operator is responsible for securing all required permits or approvals and for performing in accordance with such laws and regulations.

METHODS AND MATERIALS

A qualified professional should be retained to design, engineer, construct, operate and maintain a waste storage structure.

MAINTENANCE

A comprehensive maintenance plan should be developed in conjunction with the design and construction of a waste storage structure. Structures require regular inspection and maintenance to ensure safe operations and effectiveness.

EFFECTIVENESS

A properly designed, constructed and maintained waste storage structure will function effectively while minimizing impacts to the environment.

BMP 11-7

HOUSEHOLD HAZARDOUS WASTE MANAGEMENT

DEFINITION

The proper management of hazardous household products from the time of purchase, through application, to final disposal.

PURPOSE

Numerous household products contain solvents, caustics, petroleum products, heavy metals and other hazardous chemicals. The proper management of these products will reduce surface and ground water pollution impacts, threats to public health and safety and minimize impacts to the environment.

APPLICABILITY

The proper management of hazardous household products is applicable to every household utilizing the involved products. It is also important to the overall reduction of environmental pollution associated with Nevada's solid waste landfills.

PLANNING CRITERIA

Hazardous household products include, but are not limited to the following list:

- Motor Oils, & Lubricants
- Brake Fluids & Automatic Transmission Fluid
- Batteries
- Antifreeze
- Solvents & Degreasers
- Pesticides, Herbicides, & Fungicides
- Household Cleaners
- Wood Preservatives
- Oil Based Paints
- Lacquers and Thinners
- Polishes, Waxes, & Spot Removers

The chemical components of these products have the potential to poison, corrode, burst, and contaminate various areas of the environment including the air, soil, surface and ground water, vegetation, fisheries and wildlife. Many of these products will also interfere with the operations of septic tanks and sewer treatment plants. When hazardous products are discarded improperly they become household hazardous wastes.

METHODS AND MATERIALS

There are several ways to minimize or eliminate hazardous household wastes. Many products now have environmentally safe counterparts which accomplish the same task. In certain circumstances the environmentally safe product not only eliminates a hazardous waste, it works more effectively. It is important for the consumer to know exactly what he or she is trying to accomplish and then select the appropriate product to complete the task. Reading the product label fully before purchase will provide clear understanding of what the product will do and how to properly dispose of it. Purchase only the products you need in quantities to complete the job, as waste is usually created by purchasing excess quantities. If you are unable to use all of the product, then give it to someone else who can utilize it instead of disposing of it.

Key rules to follow when utilizing or disposing of any hazardous household waste include the following:

- * Follow label instructions for proper product application, clean up and disposal.
- * Never bury hazardous household waste or products.
- * Do not dump hazardous household wastes along roadways, in storm drains, sewer systems or septic tanks.
- * Never dispose of hazardous household wastes in streams, creeks, lakes, ponds or drainages.
- * Avoid utilizing or applying hazardous household products in or around drinking water wells or within a Wellhead Protection Area.

Recycle as many hazardous household products as possible. The local recycling center, community landfill or sanitation department can provide the consumer with current recycling information. Hazardous waste collection days are becoming very popular in most communities. Consumers are urged to safely store their household hazardous wastes until a scheduled collection day, then bring them to a central location for proper disposal.

MAINTENANCE

All household products should be stored and maintained per the product labels. Failure to maintain products in a proper manner may result in explosion, fire, environmental contamination or risk to personal health and safety.

EFFECTIVENESS

If a consumer reads and follows hazardous household product labels and disposes of the hazardous waste in the specified manner, household hazardous waste management is very effective in minimizing contamination of the environment.